M-730V/830V

SERVICE MANUAL

Ver 1.0 1999.04

Photo : M-830V

US Model
Canadian Model
AEP Model
E Model
M-730V/830V
Chinese Model
M-730V
Tourist Model
M-830V

Model Name Using Similar Mechanism	NEW
Tape Transport Mechanism Type	MZ-730V-99

SPECIFICATIONS

Tape
MICROCASSETTE™ (normal position type)
Recording system
2-track 1-channel monaural
Speaker
Approx. 3.6 cm (1 7/16 in.) dia.
Tape speed
2.4 cm/s (15/16 ips), 1.2 cm/s (15/32 ips)
Frequency range
300 - 4,000 Hz (with TAPE SPEED switch at 2.4 cm/s)
Input
Microphone input jack (minijack/PLUG IN POWER)
sensitivity 0.22 mV for 3 kilohms or lower impedance microphone
Output
Earphone jack (minijack) for 8 – 300 ohms earphone
Power output (at 10% harmonic distortion)
250 mW
Power requirements
3 V DC batteries AA (R6) × 2/External DC 3V power sources
Dimensions (w/h/d)
Approx. 62.2 × 120.5 × 25.5 mm (2 1/2 × 4 7/8 × 1 1/16 in.) incl. projecting parts and controls
Mass
Approx. 130 g (4.6 oz)

Supplied accessories
Microcassette tape MC-30 (1) (European model and "Sony World Model" only)
Batteries R6P (SR) (2) (European model and "Sony World Model" only)
Carrying case (1) (M-830V and European model of M-730V only)
Earphone (1) ("Sony World Model" only)

Design and specifications are subject to change without notice.

MICROCASSETTE™-CORDER

MICROFILM

SONY®

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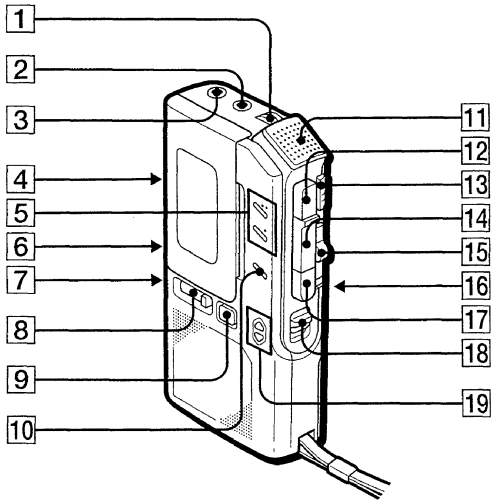
Notes on Chip Component Replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

Flexible Circuit Board Repairing

- Keep the temperature of the soldering iron around 270˚C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

SECTION 1
GENERAL



1 VOL ◣ knob
2 MIC jack
3 EAR jack
4 VOR switch
5 REC/BATT lamp
6 FAST PB switch (M-830V ONLY)
7 DC IN 3V jack
8 TAPE COUNTER
9 CUE MARKER button (M-830V ONLY)
10 ⍁(Battery) lamp (M-830V ONLY)
11 Microphone
12 ●(REC) button
13 ◢ PAUSE knob
14 ◀▶(Playback) button
15 CUE/REVIEW knob
16 TAPE SPEED select knob
17 ▮▶■(Eject/Stop) button
18 DIR ◣ knob
19 FWD/REV

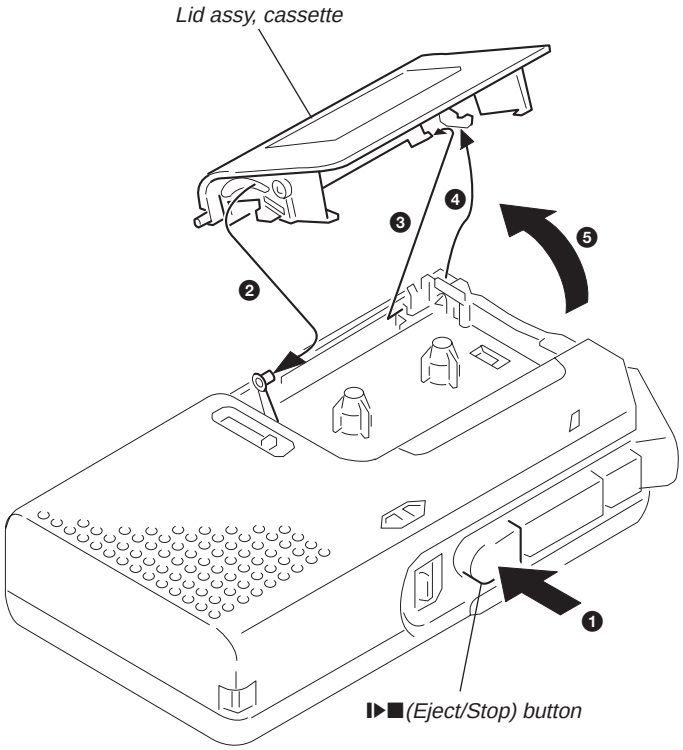
SECTION 2
DISASSEMBLY

• The equipment can be removed using the following procedure.

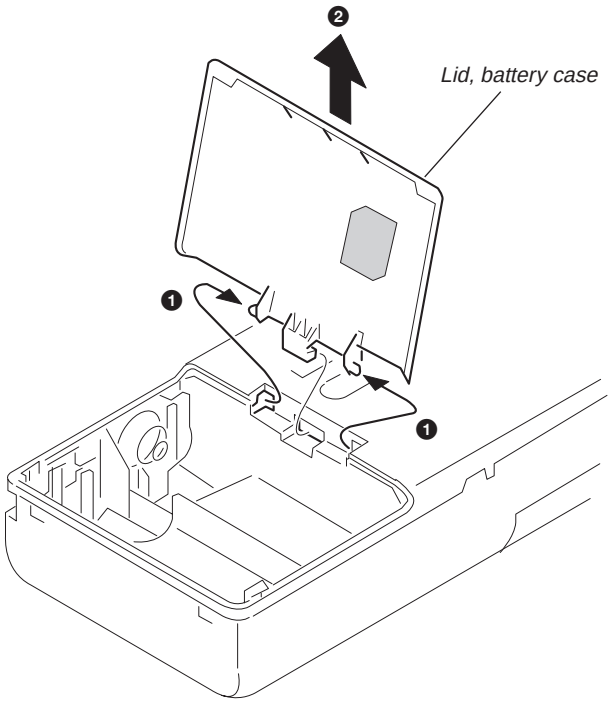
Set → *Lid assy, cassette* / *Lid, battery case* → *Cabinet (rear) assy* → *Speaker assy, Microphone* → *Main board* → *Mechanism deck* → *Head, ceramic (HRPE901,902)* / *LED unit*

Note : Follow the disassembly procedure in the numerical order given.

2-1. LID ASSY, CASSETTE

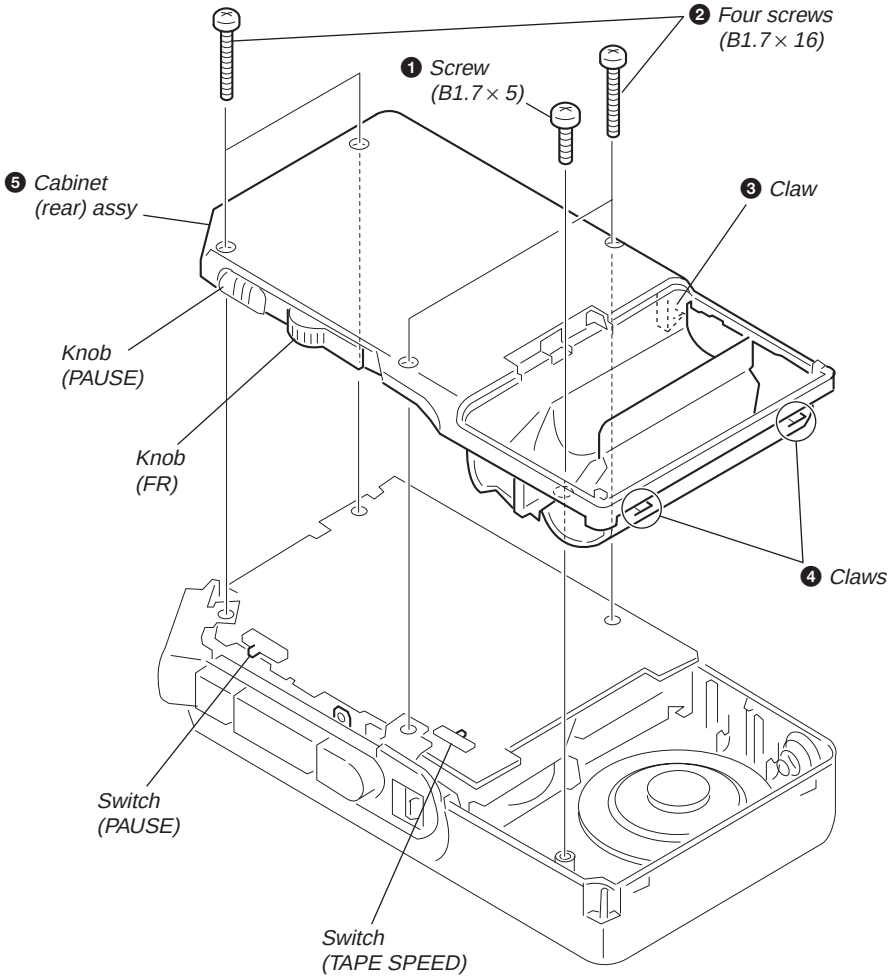


2-2. LID, BATTERY CASE

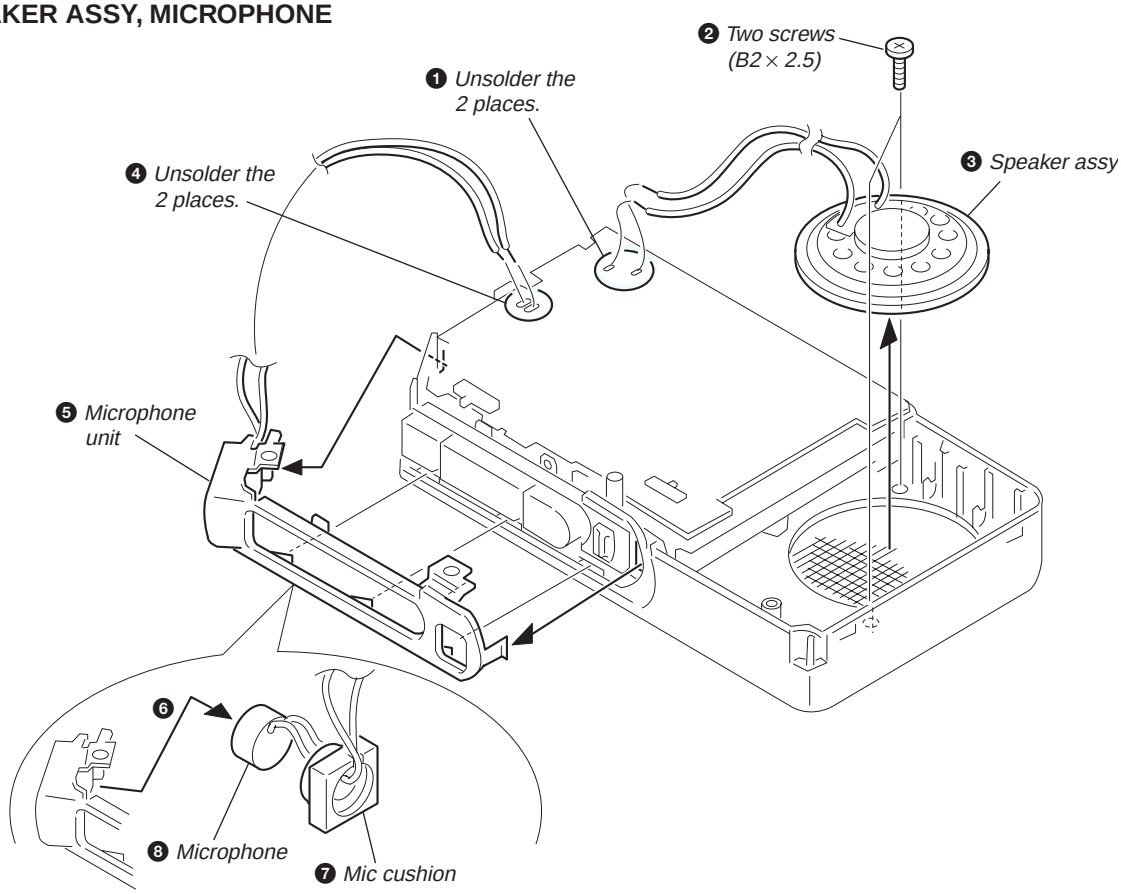


2-3. CABINET (REAR) ASSY

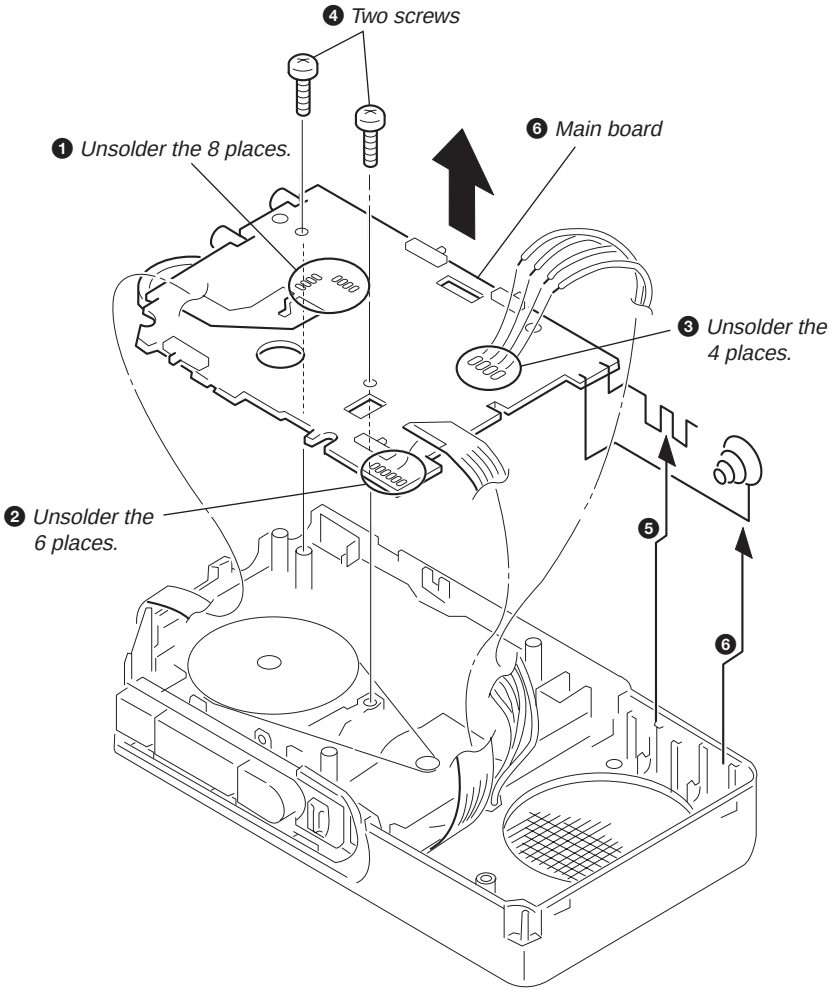
Note : When installing, fit the knobs and switches.



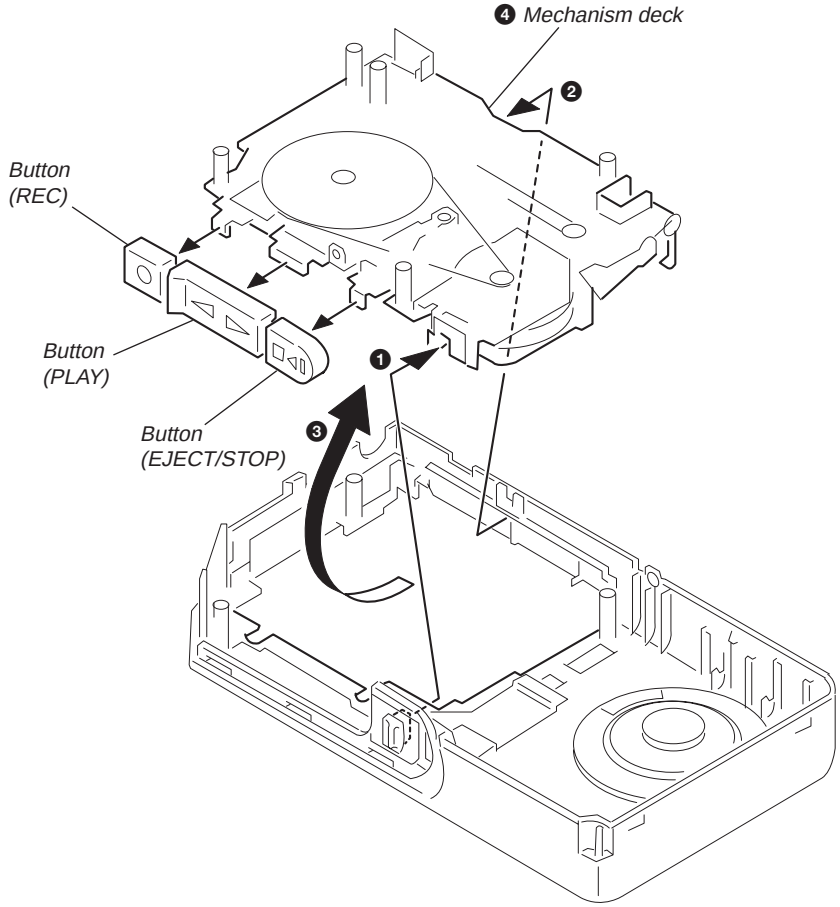
2-4. SPEAKER ASSY, MICROPHONE



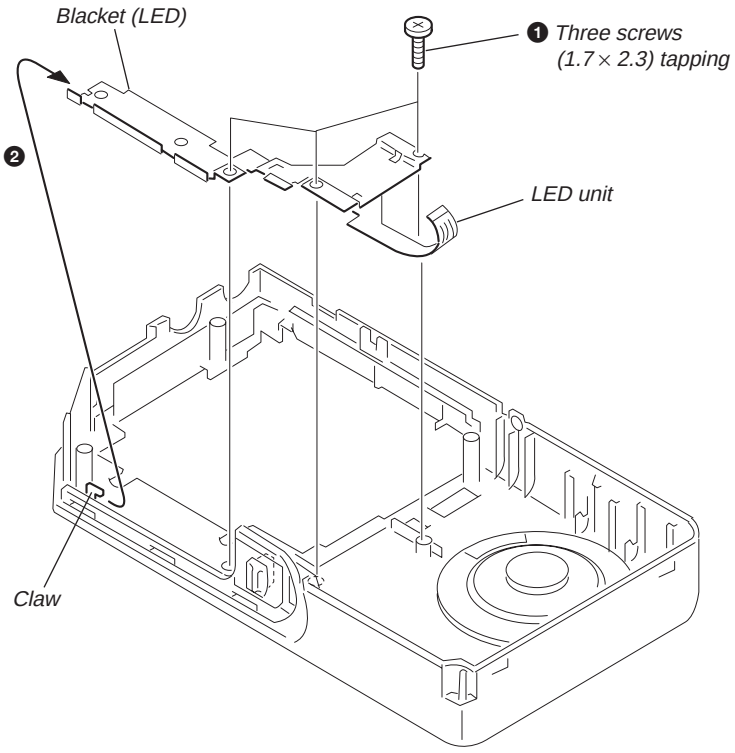
2-5. MAIN BOARD



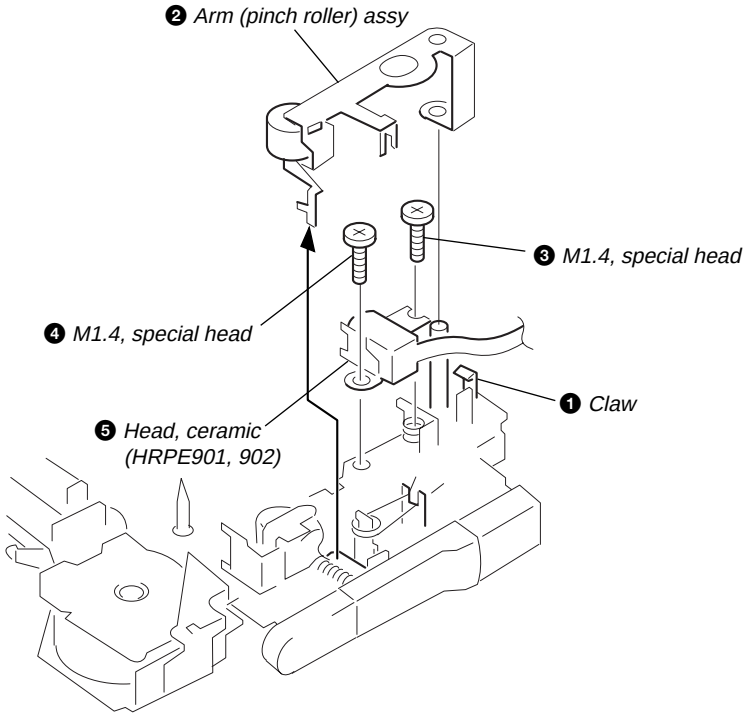
2-6. MECHANISM DECK



2-7. LED UNIT



2-8. HEAD, CERAMIC (HRPE901, 902)



SECTION 3
MECHANICAL ADJUSTMENTS

PRECAUTION

1. Clean the following parts with a denatured-alcohol-moistened swab :
   record/playback/erase head pinch roller
   rubber belts capstan
2. Demagnetize the record/playback/erase head with a head demagnetizer. (Do not bring the head demagnetizer close to the erase head.)
3. Do not use a magnetized screwdriver for the adjustments.
4. The adjustments should be performed with the rated power supply voltage unless otherwise noted.
   Power supply voltage : 3 Vdc
   TAPE SPEED switch : 2.4cm

Torque Measurement

Mode	Torque Meter	Meter Reading
Forward	CQ-102M	5 to 10 g • cm (0.07 to 0.140 oz • inch)
Reverse	CQ-102MR	5 to 10 g • cm (0.07 to 0.140 oz • inch)
Fast Forward	CQ-201M	more than 30 g • cm (more than 0.42 oz • inch)
Rewind	CQ-201M	more than 30 g • cm (more than 0.42 oz • inch)

Tape Tension Measurement

Mode	Tension Meter	Meter Reading
Forward	CQ-403M	more than 25 g (more than 0.35 oz)
Reverse	CQ-403MR	more than 25 g (more than 0.35 oz)

SECTION 4
ELECTRICAL ADJUSTMENTS

Test Tape

Type	Signal	Used for	Tape Speed (cm/s)
S-2-A030A	3 kHz, – 20 dB	Head Azimuth Adjustment	2.4
WS-24	3 kHz, – 10 dB	Tape Speed Adjustment	1.2/2.4

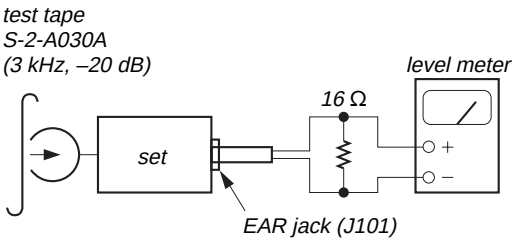
Record/Playback/Erase Head Azimuth Adjustment

Setting:

VOL control : mechanical mid
TAPE SPEED switch : 2.4cm/s
VOR switch : OFF
FAST PB switch : OFF

Procedure:

1. Mode : Playback

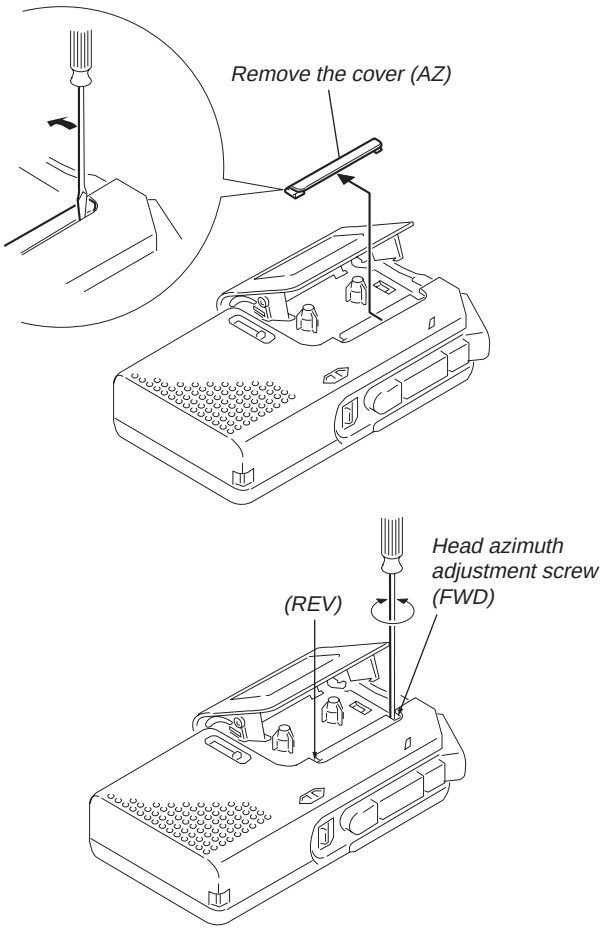


2. Turn the adjustment screw to obtain the maximum reading on level meter.

Note: Several peaks may appear, but the maximum.

Adjustment Location :

First remove the cover (AZ).



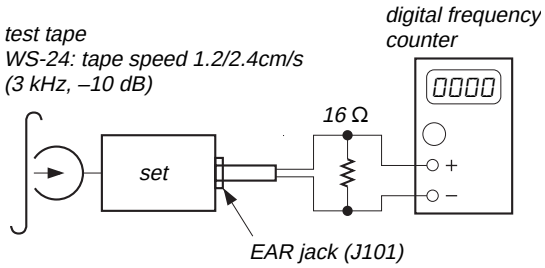
Tape Speed Adjustment

Setting:

VOL control : mechanical mid
VOR switch : OFF
FAST PB switch : ON (M-830V model only)

Procedure:

• Reform 2.4 cm/s speed adjustment before 1.2 cm/s speed adjustment mode : playback



1. Tape Speed : 2.4 cm/s
   Playback WS-24 (tape center part) and adjust RV601 so that reading on the digital frequency counter becomes 3,000 Hz.

2. Tape Speed : 1.2 cm/s
   Playback WS-24 (tape center part) and adjust RV602 so that reading on the digital frequency counter becomes 3,000 Hz.

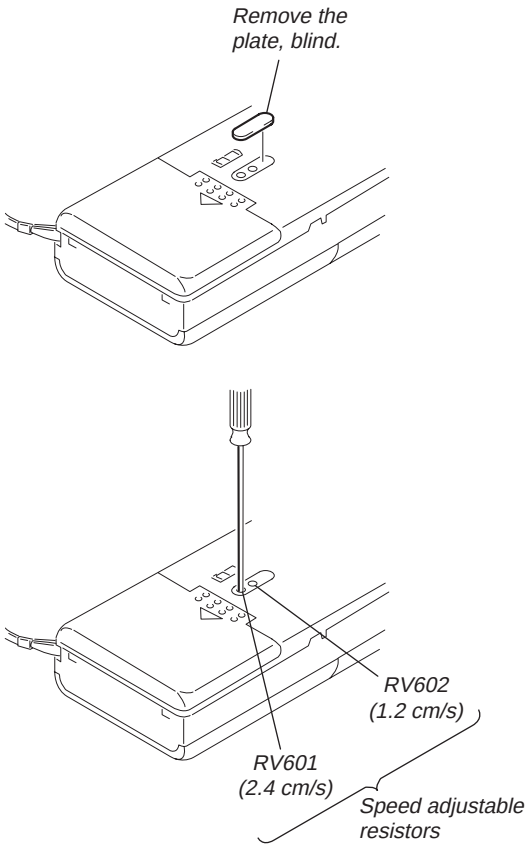
Specification Value:

Tape Speed	Frequency counter
1.2/2.4 cm/s	2,880 to 3,120 Hz

Frequency difference between the beginning and the end of the tapeshould be within ±0.5%.

Adjustment Location :

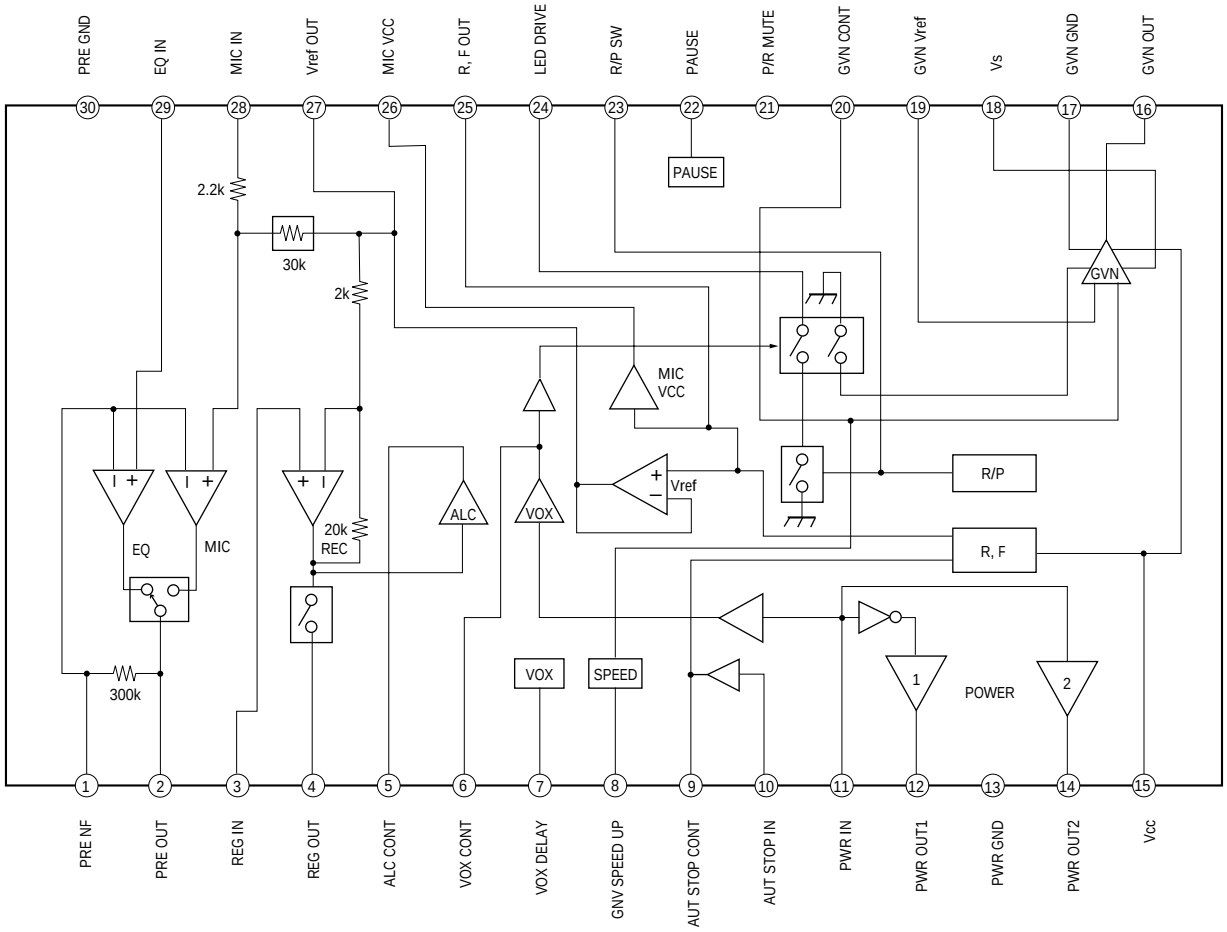
First remove the plate, blind.



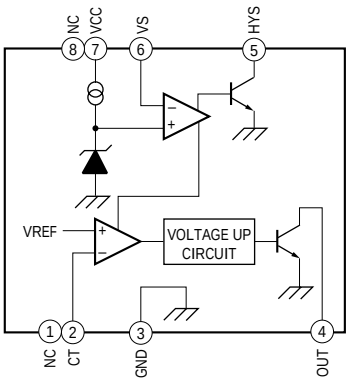
SECTION 5
DIAGRAMS

• IC Block Diagrams

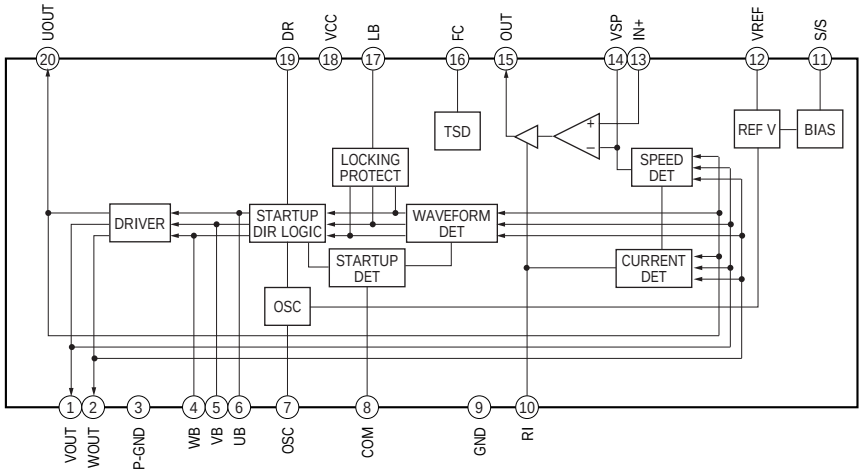
IC101 LA4168ML



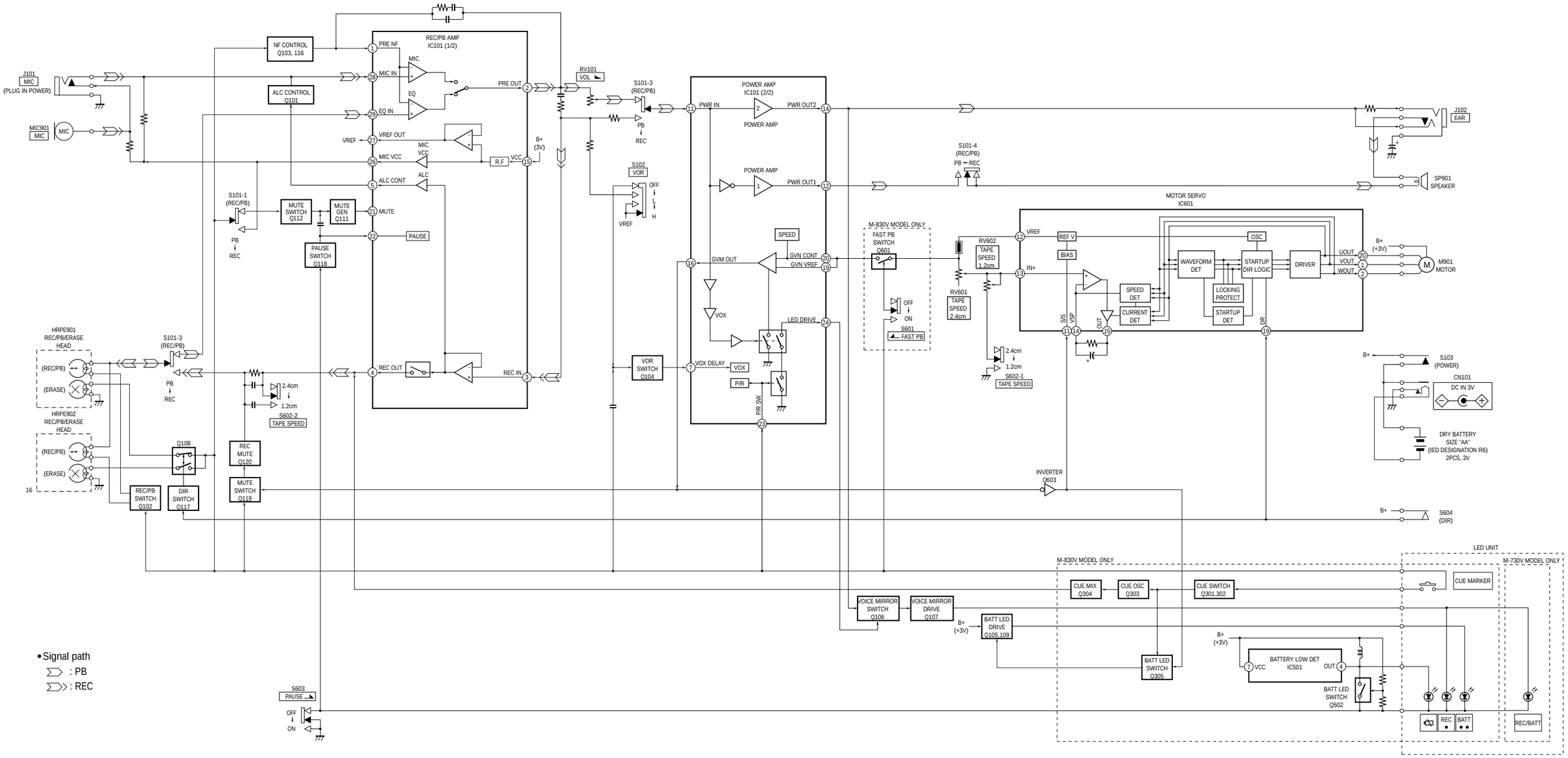
IC501 MM1251M
(M-830V model only)



IC601 LB1877V

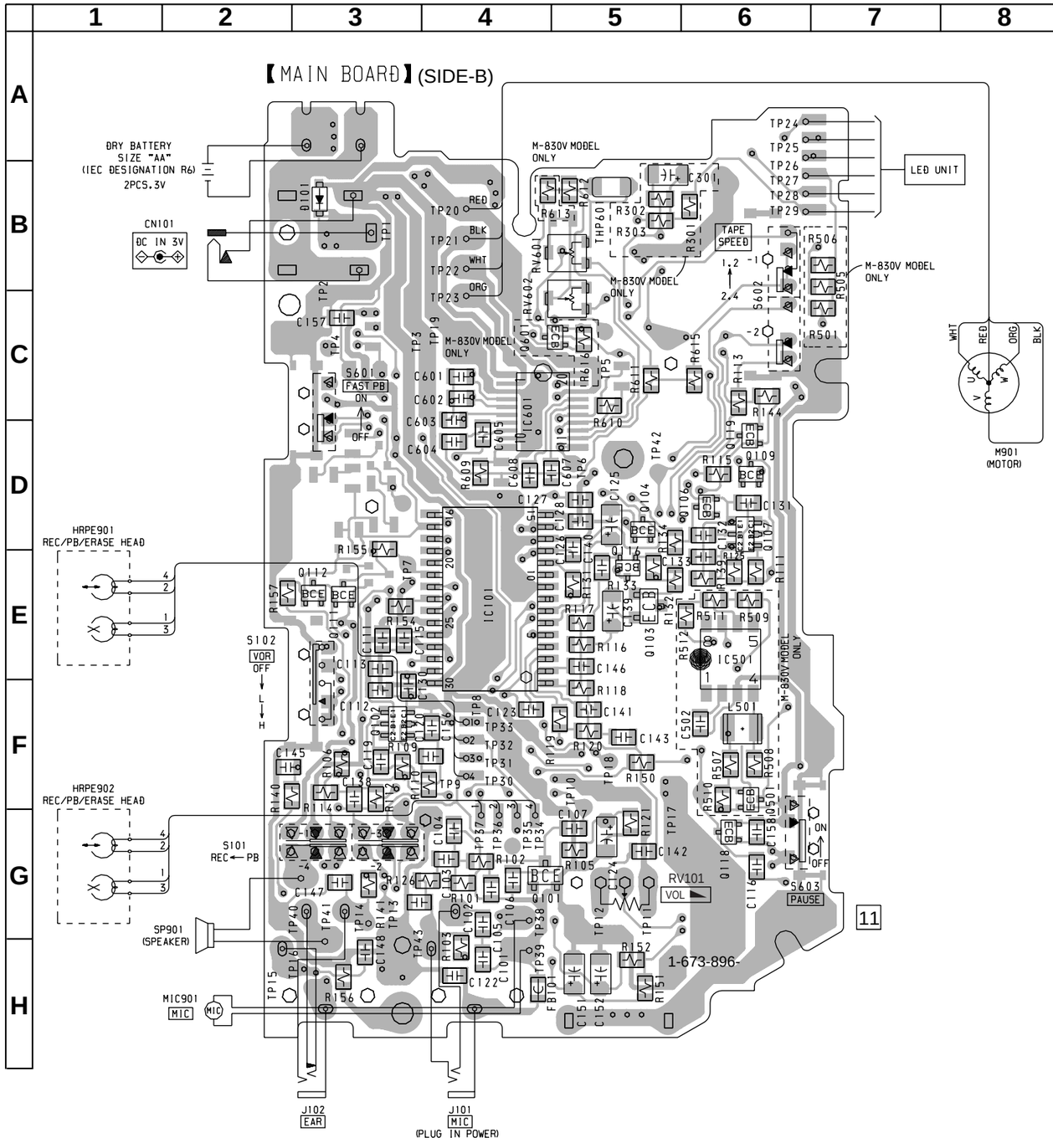


5-1. BLOCK DIAGRAM

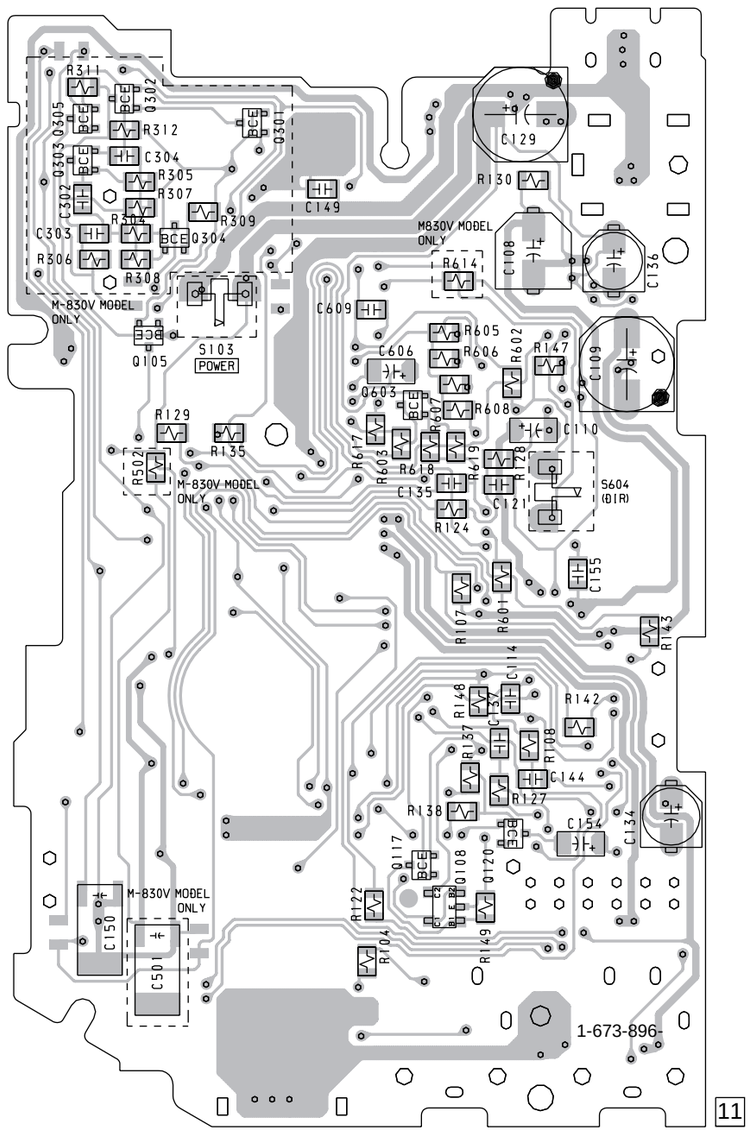


5-2. PRINTED WIRING BOARD

【MAIN BOARD】(SIDE-B)



【MAIN BOARD】(SIDE A)



• **Semiconductor Location**

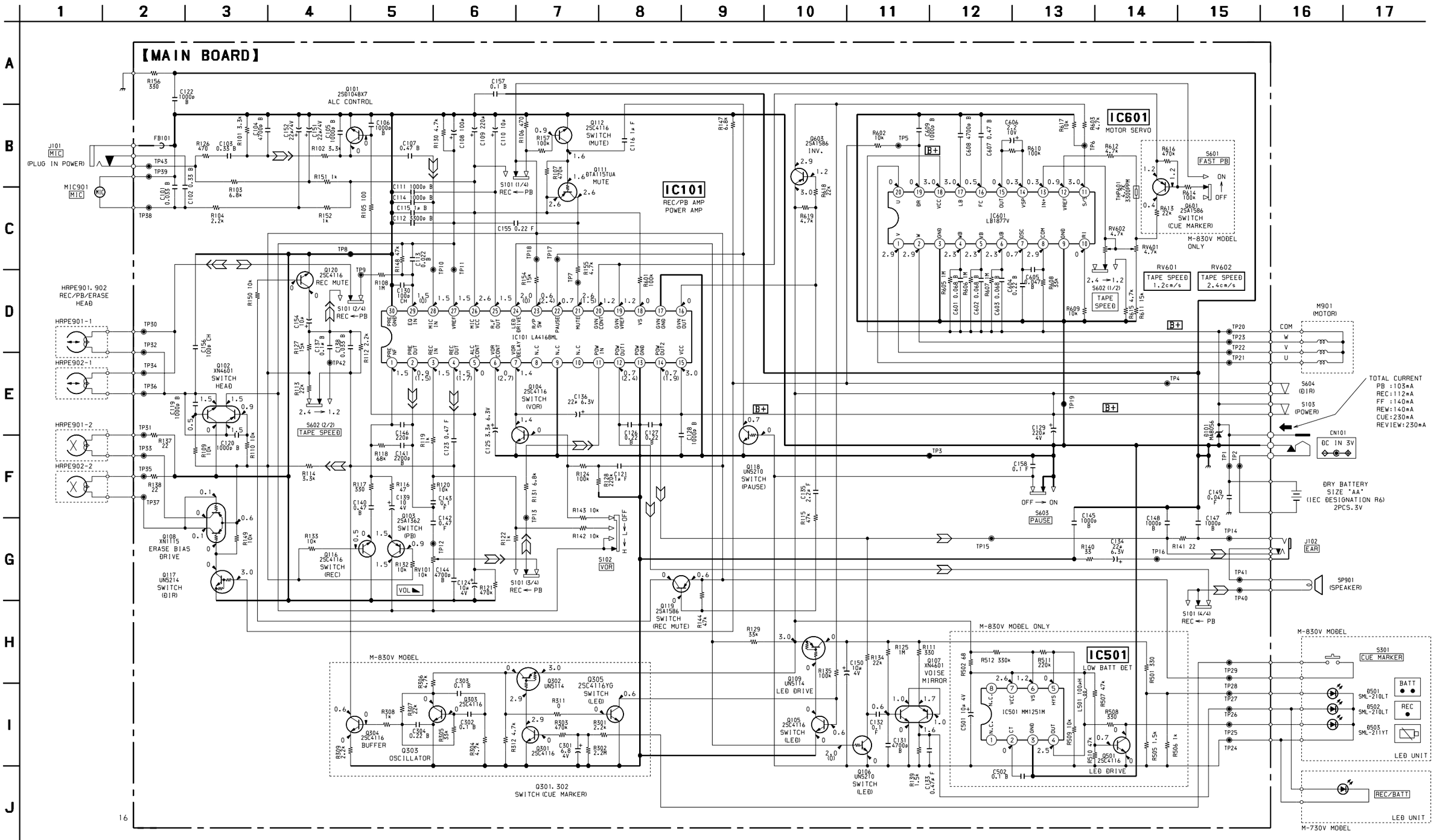
Ref. No.	Location	Ref. No.	Location	Ref. No.	Location
D101	B-3	Q106	D-6	Q301	B-10
		Q107	D-6	Q302	B-10
IC101	E-4	Q108	G-12	Q303	B-9
IC501	E-6	Q109	D-6	Q304	C-10
IC601	C-4	Q111	E-3	Q305	B-9
		Q112	E-3	Q501	F-6
Q101	G-4	Q116	E-5	Q601	C-4
Q102	F-3	Q117	F-12	Q6030	D-11
Q103	E-5	Q118	G-6		
Q104	D-5	Q119	D-6		
Q105	C-10	Q120	F-12		

Note:

- ⟜—— : parts extracted from the component side.
- ○ : Through hole.
- ▒▒ : Pattern from the side which enables seeing.

Caution:
Pattern face side: (SIDE B) Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (SIDE A) Parts on the parts face side seen from the parts face are indicated.

5-3. SCHEMATIC DIAGRAM • Refer to page 10 for IC Block Diagrams.



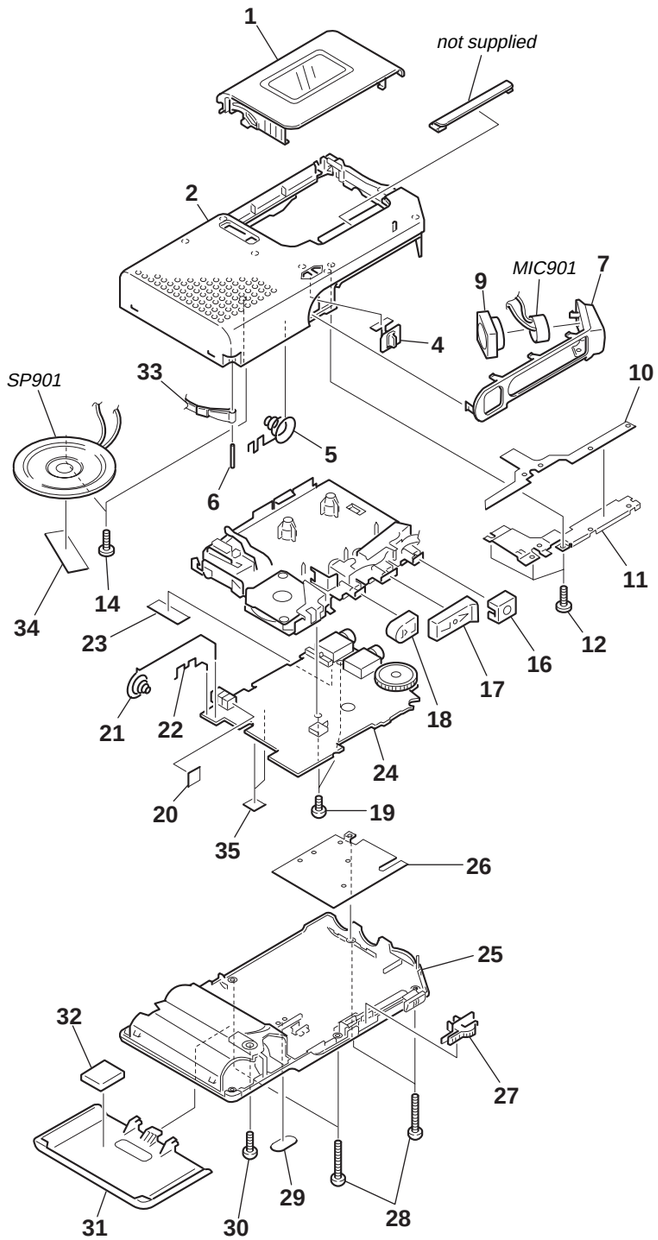
Note:

- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- ▭ : panel designation.
- B + : B+ Line.
- ▭ : adjustment for repair.
- Power voltage is dc 3 V and fed with regulated dc power supply from battery terminal.
- Voltage is dc with respect to ground under no-signal condition.
  no mark : PB
  ( ) : REC
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ▷ : PB
  ▷▷ : REC

SECTION 6
EXPLODED VIEWS

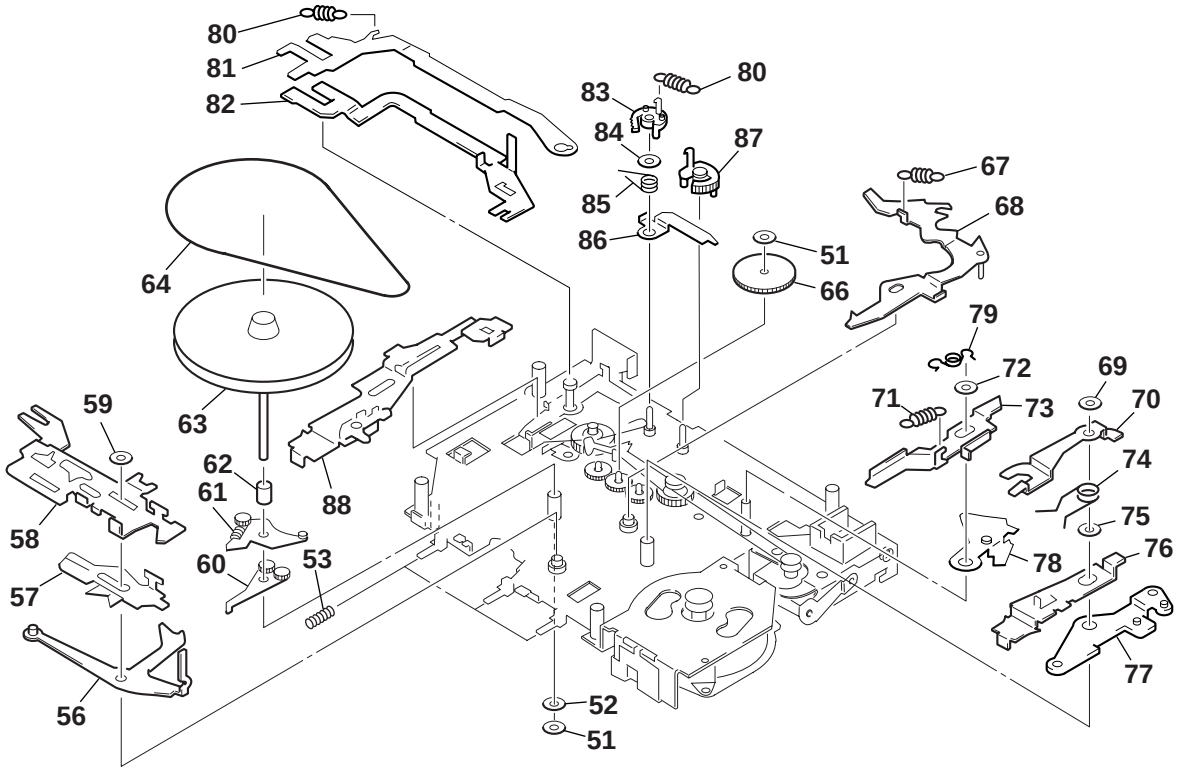
NOTE:
- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example :
  KNOB, BALANCE (WHITE) ... (RED)
  ↑ Parts Color ↑ Cabinet's Color
- Accessories and packing materials are given in the last of this parts list.
- Abbreviation
  CND : Canadian model
  JEW : Tourist model

6-1. CABINET SECTION



Ref. No.	Part No.	Description	Remark
1	A-3050-984-A	LID ASSY, CASSETTE (730V)	
1	A-3050-988-A	LID ASSY, CASSETTE (830V)	
2	X-3377-337-1	CABINET (FRONT) SUB ASSY (830V)	
2	X-3377-343-1	CABINET (FRONT) SUB ASSY (730V)	
4	3-031-649-01	KNOB(RV)	
5	3-010-503-01	SPRING(B), BATTERY COIL	
6	3-669-481-07	PIN(DIA.1X10), PARALLEL	
7	3-031-645-01	HOLDER, MIC	
9	3-031-653-01	CUSHION, MIC	
10	1-418-390-11	LED UNIT (830V)	
10	1-418-391-11	LED UNIT (730V)	
11	3-031-652-01	BRACKET (LED)	
12	3-318-382-31	SCREW (1.7), TAPPING	
14	3-034-792-01	SCREW (2X2.5), TAPPING (B)	
16	3-031-656-01	BUTTON (REC)	
17	3-031-655-01	BUTTON (PLAY)	
18	3-031-654-01	BUTTON (STOP)	
19	3-704-197-31	LOCK, SERRAT IB	
20	3-036-882-01	SPACER (JACK)	
21	3-034-687-01	TERMINAL (-), BATTERY	
22	3-034-686-01	TERMINAL (+), BATTERY	
23	3-831-441-99	SPACER, KNOB	
24	A-3021-220-A	MAIN BOARD, COMPLETE (730V)	
24	A-3021-221-A	MAIN BOARD, COMPLETE (830V)	
25	X-3377-334-1	CABINET (REAR) ASSY (830V:US,CND,AEP,E)	
25	X-3377-335-1	CABINET (REAR) ASSY (830V:JEW)	
25	X-3377-336-1	CABINET (REAR) ASSY (730V)	
26	3-034-550-01	PLATE, SHIELD	
27	3-031-660-01	KNOB(FR)	
28	3-035-255-11	SCREW (1.7X16)	
29	3-358-363-31	PLATE, BLIND	
30	3-318-203-72	SCREW (B1.7X5), TAPPING	
31	3-031-662-01	LID,BATTERY CASE (830V)	
31	3-031-662-11	LID,BATTERY CASE (730V)	
* 32	3-914-930-01	CUSHION (BATTERY CASE LID)	
33	3-328-319-01	STRAP, HAND	
34	3-037-193-01	CUSHION (SP)	
35	3-037-146-01	CUSHION (A)	
SP901	1-505-838-11	SPEAKER (3.6cm)	
MIC901	1-542-386-11	MICROPHONE, ELECTRET CONDENSER (MIC)	

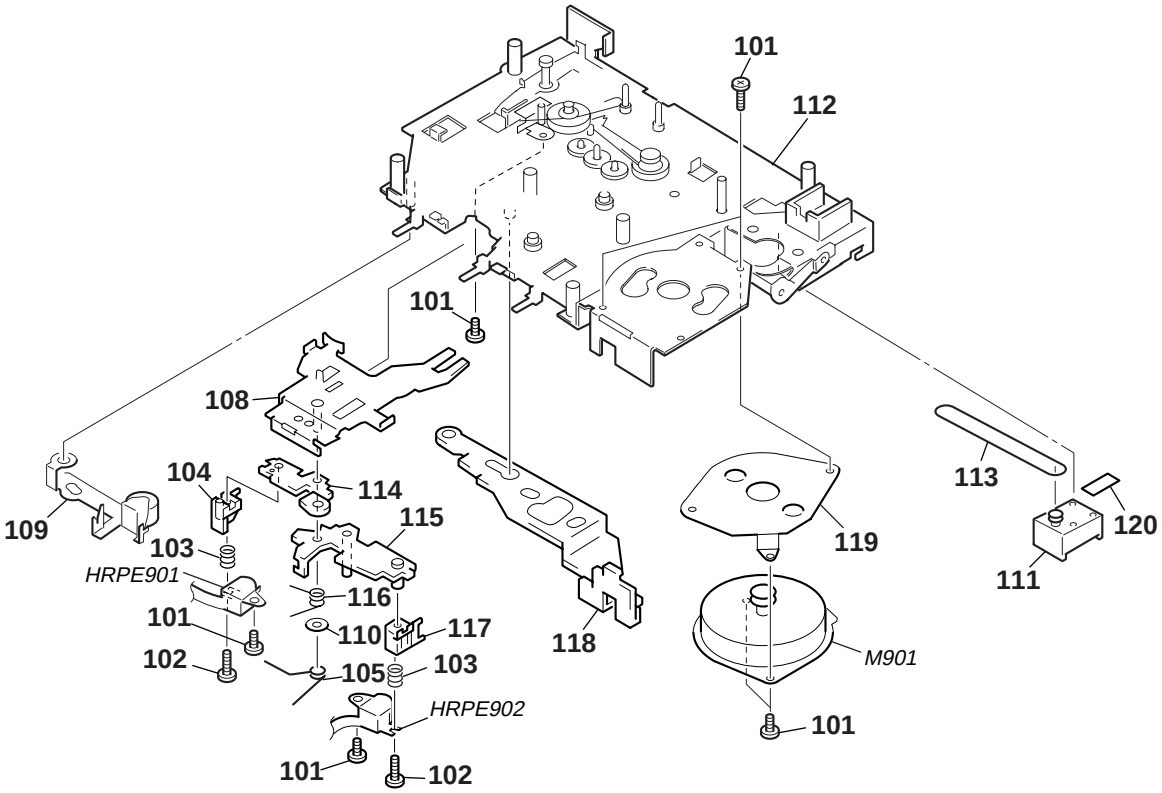
6-2. MECHANISM DECK SECTION (1)
(MZ-730V-99)



Ref. No.	Part No.	Description	Remark
51	3-331-007-21	WASHER	
52	3-350-989-01	WASHER	
53	3-028-961-01	SPRING (BUTTON), COMPRESSION	
56	3-028-929-01	LEVER (POWER SW)	
57	3-028-940-02	LEVER (SRS)	
58	3-028-938-01	LEVER (SLIDE)	
59	3-578-224-00	WASHER	
60	X-3376-227-1	LEVER (F/R) ASSY	
61	X-3376-228-1	LEVER (TU) ASSY	
62	3-029-634-01	BEARING	
63	X-3376-231-1	FLYWHEEL ASSY	
64	3-377-420-11	BELT	
66	X-3376-230-1	LIMITTER ASSY	
67	3-028-955-01	SPRING (LOCK), TENSION	
68	X-3377-535-1	LEVER (LOCK) ASSY	
69	4-992-239-01	WASHER (A)	
* 70	3-028-967-01	LEVER (PAUSE RELEASE)	
71	3-028-954-01	SPRING (SW LEVER), TENSION	

Ref. No.	Part No.	Description	Remark
72	3-321-483-11	RING, RETAINING	
73	3-028-928-01	LEVER (EJECT)	
74	3-028-964-01	SPRING (SLIDER), TORSION	
75	4-926-562-01	WASHER, STOPPER	
76	3-028-927-01	LEVER (STOP)	
77	3-028-920-01	LEVER (REVERSE SWITCH)	
78	X-3376-236-1	LEVER (CLAW DETECTION R) ASSY	
79	3-029-635-01	SPRING (LEVER DIR), TORSION	
80	3-029-639-01	SPRING, TENSION	
81	3-028-932-01	LEVER (JOINT)	
82	3-028-933-01	LEVER (DIR)	
83	3-028-905-01	GEAR(S-OFF), CAM	
84	3-167-330-01	WASHER	
85	3-028-942-01	SPRING (D-LOCK), TORSION	
86	3-028-941-01	LEVER (DIR-LOCK)	
87	3-028-906-01	GEAR(REVERSE), CAM	
88	X-3376-224-1	LEVER (REC) ASSY	

6-3. MECHANISM DECK SECTION (2)
(MZ-730V-99)



Ref. No.	Part No.	Description	Remark
101	3-703-816-31	SCREW (M1.4), SPECIAL HEAD	
102	3-703-816-73	SCREW (M1.4), SPECIAL HEAD	
103	3-028-960-01	SPRING (AZIMUTH), COMPRESSION	
104	3-028-909-01	GUIDE (N), TAPE	
105	3-028-965-01	SPRING (PINCH ARM), TORSION	
108	X-3376-232-1	LEVER (PLAY) ASSY	
109	X-3376-235-1	ARM(PINCH ROLLER) ASSY	
110	3-321-483-11	RING, RETAINING	
111	1-548-579-41	COUNTER, TAPE (SMALL TYPE)	
112	X-3376-726-1	CHASSIS (COMP) ASSY (R)	
113	3-343-948-01	BELT	

Ref. No.	Part No.	Description	Remark
114	3-028-922-01	BRACKET (N), HEAD	
115	X-3376-234-1	BRACKET (R) ASSY, HEAD	
116	3-028-962-01	SPRING, TORSION	
117	3-028-910-01	GUIDE (R), TAPE	
118	3-028-921-01	LEVER (HEAD ROTARY)	
119	3-029-808-01	BRACKET (MOTOR)	
120	3-365-053-01	SHEET (BA), ADHESIVE	
M901	1-763-236-11	MOTOR, DC (REEL/CAPSTAN)(WITH PULLY)	
HRPE901	1-500-593-11	HEAD, CERAMIC (REC/PB/ERASE)	
HRPE902	1-500-594-11	HEAD, CERAMIC (REC/PB/ERASE)	

SECTION 7
ELECTRICAL PARTS LIST

MAIN

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL:Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F:nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u : µ, for example:
  uA.. : µA.. uPA.. : µPA..
  uPB.. : µPB.. uPC.. : µPC.. uPD.. : µPD..
- CAPACITORS
  uF : µF
- COILS
  uH : µH
  When indicating parts by reference number, please include the board.
- Abbreviation
  CND : Canadian model
  EE : East European model
  CH : Chinese model
  JEW : Tourist model

Ref. No.	Part No.	Description			Remark
	A-3021-220-A	MAIN BOARD, COMPLETE (730V)			
		**********			
	A-3021-221-A	MAIN BOARD, COMPLETE (830V)			
		**********			
		< CAPACITOR >			
C101	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C102	1-110-501-11	CERAMIC CHIP	0.33uF	10%	16V
C103	1-110-501-11	CERAMIC CHIP	0.33uF	10%	16V
C104	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C105	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C106	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C107	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C108	1-126-209-11	ELECT CHIP	100uF	20%	4V
C109	1-113-690-11	ELECT CHIP	220uF	20%	4V
C110	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C111	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C112	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V
C113	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C114	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C115	1-109-982-11	CERAMIC CHIP	1uF	10%	10V
C116	1-164-346-11	CERAMIC CHIP	1uF		16V
C119	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C120	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C121	1-164-346-11	CERAMIC CHIP	1uF		16V
C122	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C123	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C124	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C125	1-135-180-21	TANTALUM CHIP	3.3uF	20%	6.3V
C126	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C127	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C128	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C129	1-126-246-11	ELECT CHIP	220uF	20%	4V
C130	1-163-251-11	CERAMIC CHIP	100pF	5%	50V
C131	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C132	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C133	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C134	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C135	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C136	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C137	1-107-725-11	CERAMIC CHIP	0.1uF	10%	16V
C138	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V
C139	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C140	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C141	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C142	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C143	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C144	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C145	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C146	1-163-001-11	CERAMIC CHIP	220PF	10%	50V
C147	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C148	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C149	1-163-035-00	CERAMIC CHIP	0.047uF		50V
C150	1-128-014-11	ELECT CHIP	10uF	20%	4V
C151	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C152	1-104-847-11	TANTAL. CHIP	22uF	20%	4V
C154	1-135-201-11	TANTALUM CHIP	10uF	20%	4V
C155	1-164-222-11	CERAMIC CHIP	0.22uF		25V
C156	1-163-251-11	CERAMIC CHIP	100pF	5%	50V
C157	1-107-725-11	CERAMIC CHIP	0.1uF	10%	16V
C158	1-163-038-91	CERAMIC CHIP	0.1uF		25V
C301	1-135-170-21	TANTALUM CHIP	6.8uF	20%	4V (830V)
C302	1-107-725-11	CERAMIC CHIP	0.1uF	10%	16V (830V)
C303	1-107-725-11	CERAMIC CHIP	0.1uF	10%	16V (830V)
C304	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V (830V)
C501	1-128-014-11	ELECT CHIP	10uF	20%	4V (830V)
C502	1-107-725-11	CERAMIC CHIP	0.1uF	10%	16V (830V)
C601	1-164-344-11	CERAMIC CHIP	0.068uF	10%	25V
C602	1-164-344-11	CERAMIC CHIP	0.068uF	10%	25V
C603	1-164-344-11	CERAMIC CHIP	0.068uF	10%	25V
C604	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C605	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C606	1-135-149-21	TANTALUM CHIP	2.2uF	20%	10V
C607	1-107-823-11	CERAMIC CHIP	0.47uF	10%	16V
C608	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V
C609	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
		< CONNECTOR >			
CN101	1-580-372-41	JACK,DC (POLARITY UNIFIED TYPE) (DC IN 3V)			

MAIN

Ref. No.	Part No.	Description			Remark
		< DIODE >			
D101	8-719-422-56	DIODE MA8056-H-TX			
		< FERRITE BEAD >			
FB101	1-414-235-22	INDUCTOR CHIP 0uH			
		< IC >			
IC101	8-759-492-49	IC LA4168ML			
IC501	8-759-399-49	IC MM1251 (830V)			
IC601	8-759-566-10	IC LB1877V			
		< JACK >			
J101	1-785-791-11	JACK (MIC)			
J102	1-785-790-11	JACK (EAR)			
		< COIL >			
L501	1-412-032-11	INDUCTOR CHIP 100uH (830V)			
		< TRANSISTOR >			
Q101	8-729-800-37	TRANSISTOR 2SD1048-X7			
Q102	8-729-402-84	TRANSISTOR XN4601			
Q103	8-729-230-72	TRANSISTOR 2SA1362YG			
Q104	8-729-230-63	TRANSISTOR 2SC4116-YG			
Q105	8-729-230-63	TRANSISTOR 2SC4116-YG			
Q106	8-729-420-44	TRANSISTOR UN5210			
Q107	8-729-402-84	TRANSISTOR XN4601			
Q108	8-729-403-45	TRANSISTOR XN1115			
Q109	8-729-402-96	TRANSISTOR UN5114			
Q111	8-729-028-78	TRANSISTOR DTA115TUA-T106			
Q112	8-729-230-63	TRANSISTOR 2SC4116-YG			
Q116	8-729-230-63	TRANSISTOR 2SC4116-YG			
Q117	8-729-402-93	TRANSISTOR UN5214-TX			
Q118	8-729-420-44	TRANSISTOR UN5210			
Q119	8-729-230-60	TRANSISTOR 2SA1586-YG			
Q120	8-729-230-63	TRANSISTOR 2SC4116-YG			
Q301	8-729-230-63	TRANSISTOR 2SC4116-YG (830V)			
Q302	8-729-402-96	TRANSISTOR UN5114 (830V)			
Q303	8-729-230-63	TRANSISTOR 2SC4116-YG (830V)			
Q304	8-729-230-63	TRANSISTOR 2SC4116-YG (830V)			
Q305	8-729-230-63	TRANSISTOR 2SC4116-YG (830V)			
Q501	8-729-230-63	TRANSISTOR 2SC4116-YG (830V)			
Q601	8-729-230-60	TRANSISTOR 2SA1586-YG (830V)			
Q603	8-729-230-60	TRANSISTOR 2SA1586-YG			
		< RESISTOR >			
R101	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R102	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R103	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R104	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R105	1-216-025-91	RES,CHIP	100	5%	1/10W
R106	1-216-041-00	METAL CHIP	470	5%	1/10W
R107	1-216-113-00	METAL CHIP	470K	5%	1/10W
R109	1-216-073-00	METAL CHIP	10K	5%	1/10W
R110	1-216-073-00	METAL CHIP	10K	5%	1/10W
R111	1-216-037-00	METAL CHIP	330	5%	1/10W

Ref. No.	Part No.	Description			Remark
R112	1-216-057-00	METAL CHIP	2.2K	5%	1/10W
R113	1-216-081-00	METAL CHIP	22K	5%	1/10W
R114	1-216-061-00	METAL CHIP	3.3K	5%	1/10W
R115	1-216-089-91	RES,CHIP	47K	5%	1/10W
R116	1-216-017-91	RES,CHIP	47	5%	1/10W
R117	1-216-037-00	METAL CHIP	330	5%	1/10W
R118	1-216-093-91	RES,CHIP	68K	5%	1/10W
R119	1-216-049-91	RES,CHIP	1K	5%	1/10W
R120	1-216-073-00	METAL CHIP	10K	5%	1/10W
R121	1-216-113-00	METAL CHIP	470K	5%	1/10W
R122	1-216-049-91	RES,CHIP	1K	5%	1/10W
R124	1-216-097-91	RES,CHIP	100K	5%	1/10W
R125	1-216-121-91	RES,CHIP	1M	5%	1/10W
R126	1-216-041-00	METAL CHIP	470	5%	1/10W
R127	1-216-077-00	METAL CHIP	15K	5%	1/10W
R128	1-216-105-91	RES,CHIP	220K	5%	1/10W
R129	1-216-085-00	METAL CHIP	33K	5%	1/10W
R130	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R131	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R132	1-216-073-00	METAL CHIP	10K	5%	1/10W
R133	1-216-073-00	METAL CHIP	10K	5%	1/10W
R134	1-216-081-00	METAL CHIP	22K	5%	1/10W
R135	1-216-097-91	RES,CHIP	100K	5%	1/10W
R137	1-216-009-91	RES,CHIP	22	5%	1/10W
R138	1-216-009-91	RES,CHIP	22	5%	1/10W
R139	1-216-053-00	METAL CHIP	1.5K	5%	1/10W
R140	1-216-013-00	METAL CHIP	33	5%	1/10W
R141	1-216-009-91	RES,CHIP	22	5%	1/10W
R142	1-216-073-00	METAL CHIP	10K	5%	1/10W
R143	1-216-073-00	METAL CHIP	10K	5%	1/10W
R144	1-216-089-91	RES,CHIP	47K	5%	1/10W
R147	1-216-069-00	METAL CHIP	6.8K	5%	1/10W
R148	1-216-089-91	RES,CHIP	47K	%	1/10W
R149	1-216-073-00	METAL CHIP	10K	5%	1/10W
R150	1-216-073-00	METAL CHIP	10K	5%	1/10W
R151	1-216-049-91	RES,CHIP	1K	5%	1/10W
R152	1-216-049-91	RES,CHIP	1K	5%	1/10W
R154	1-216-077-00	METAL CHIP	15K	5%	1/10W
R155	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R156	1-216-037-00	METAL CHIP	330	5%	1/10W
R157	1-216-097-91	RES,CHIP	100K	5%	1/10W
R301	1-216-057-00	METAL CHIP	2.2K	5%	1/10W (830V)
R302	1-216-129-00	METAL CHIP	2.2M	5%	1/10W (830V)
R303	1-216-113-00	METAL CHIP	470K	5%	1/10W (830V)
R304	1-216-065-91	RES,CHIP	4.7K	5%	1/10W (830V)
R305	1-216-085-00	METAL CHIP	33K	5%	1/10W (830V)
R306	1-216-065-91	RES,CHIP	4.7K	5%	1/10W (830V)
R307	1-216-081-00	METAL CHIP	22K	5%	1/10W (830V)
R308	1-216-049-91	RES,CHIP	1K	5%	1/10W (830V)
R309	1-216-057-00	METAL CHIP	2.2K	5%	1/10W (830V)

Ref. No.	Part No.	Description			Remark
R311	1-216-295-91	RES,CHIP	0		(830V)
R312	1-216-065-91	RES,CHIP	4.7K	5%	1/10W (830V)
R501	1-216-037-00	METAL CHIP	330	5%	1/10W (830V)
R502	1-216-021-00	METAL CHIP	68	5%	1/10W (830V)
R505	1-216-053-00	METAL CHIP	1.5K	5%	1/10W (830V)
R506	1-216-049-91	RES,CHIP	1K	5%	1/10W (830V)
R507	1-216-089-91	RES,CHIP	47K	5%	1/10W (830V)
R508	1-216-037-00	METAL CHIP	330	5%	1/10W (830V)
R509	1-216-073-00	METAL CHIP	10K	5%	1/10W (830V)
R510	1-216-089-91	RES,CHIP	47K	5%	1/10W (830V)
R511	1-216-105-91	RES,CHIP	220K	5%	1/10W (830V)
R512	1-216-109-00	METAL CHIP	330K	5%	1/10W (830V)
R601	1-216-097-91	RES,CHIP	100K	5%	1/10W
R602	1-216-073-00	METAL CHIP	10K	5%	1/10W
R603	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R605	1-216-121-91	RES,CHIP	1M	5%	1/10W
R606	1-216-121-91	RES,CHIP	1M	5%	1/10W
R607	1-216-121-91	RES,CHIP	1M	5%	1/10W
R608	1-216-085-91	RES,CHIP	33K	5%	1/10W
R609	1-216-073-00	METAL CHIP	10K	5%	1/10W
R610	1-216-097-91	RES,CHIP	100K	5%	1/10W
R611	1-216-077-00	METAL CHIP	15K	5%	1/10W
R612	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R613	1-216-081-00	METAL CHIP	22K	5%	1/10W (830V)
R614	1-216-097-91	RES,CHIP	100K	5%	1/10W (830V)
R615	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R616	1-216-113-00	METAL CHIP	470K	5%	1/10W (830V)
R617	1-216-073-00	METAL CHIP	10K	5%	1/10W
R618	1-216-081-00	METAL CHIP	22K	5%	1/10W
R619	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
		< VARIABLE RESISTOR >			
RV101	1-237-731-21	RES, VAR, CARBON 10K (VOL ◣)			
RV601	1-223-585-11	RES, ADJ, CARBON 4.7K			
RV602	1-223-585-11	RES, ADJ, CARBON 4.7K			

Ref. No.	Part No.	Description	Remark
0		< SWITCH >	
S101	1-572-964-11	SWITCH, SLIDE	
S102	1-692-605-31	SWITCH, SLIDE (VOR)	
S103	1-762-594-41	SWITCH, PUSH (1 KEY) (POWER)	
S601	1-572-922-31	SWITCH, SLIDE (FAST PB) (830V)	
S602	1-571-277-51	SWITCH, SLIDE (TAPE SPEED)	
S603	1-572-922-31	SWITCH, SLIDE (PAUSE)	
S604	1-572-688-11	SWITCH, PUSH (1 KEY) (DIR)	
		< THERMISTOR(POSITIVE) >	
THP601	1-810-794-11	THERMISTOR, POSITIVE	
**********			
		MISCELLANEOUS	
		**********	
10	1-418-390-11	LED UNIT (830V)	
10	1-418-391-11	LED UNIT (730V)	
HRPE901	1-500-593-11	HEAD, CERAMIC (REC/PB/ERASE)	
HRPE902	1-500-594-11	HEAD, CERAMIC (REC/PB/ERASE)	
M901	1-763-236-11	MOTOR, DC (REEL/CAPSTAN)(WITH PULLY)	
MIC901	1-542-386-11	MICROPHONE, ELECTRET CONDENSER (MIC)	
SP901	1-505-838-11	SPEAKER (3.6cm)	
**********			
		ACCESORIES & PACKING MATERIALS	
		**********	
	3-024-275-01	CASE,CARRYING (730V:AEP,EE,830V)	
	3-031-650-01	COVER(AZIMUTH)	
	3-865-289-11	MANUAL, INSTRUCTION (JAPANESE) (JEW)	
	3-865-289-21	MANUAL, INSTRUCTION (ENGLISH) (US,CND)	
	3-865-289-31	MANUAL, INSTRUCTION (FRENCH) (CND,AEP)	
	3-865-289-41	MANUAL, INSTRUCTION (ENGLISH/SPANISH/PORTUGUESE/ITALIAN)	(AEP,E)
	3-865-289-51	MANUAL, INSTRUCTION (GERMAN/DUTCH/SWEDISH/FINNISH)	(AEP)
	3-865-289-61	MANUAL, INSTRUCTION (ENGLISH/SIMPLIFIED CHINESE/HUNGARIAN/RUSSIAN)	(EE,CH,JEW)
	3-865-289-71	MANUAL, INSTRUCTION (TRADITIONAL CHINESE/KOREAN/POLISH/CZECH)	(EE,JEW)
	3-865-289-81	MANUAL, INSTRUCTION (ENGLISH/TRADITIONAL CHINESE)	(E)
	8-952-251-90	HEADPHONE MDR-E122 SET (830V:JEW)	

9-927-100-11

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